IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	10/006,072	Confirmation No.	8815
Applicant	:	Clem		
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Examiner	:	Moore Jr		
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Customer No.	:	33356		

Mail Stop Appeal Brief- Patents
Commissioner for Patents
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APPEAL BRIEF

Dear Sir:

The following Appeal Brief is submitted pursuant to the Notice of Appeal dated 6/18/06 for consideration by the Board of Appeals and Interferences. 37 C.F.R. § 41.37.

(i) REAL PARTY IN INTEREST

The real party in interest is Internet Machines Corp.

(ii) RELATED APPEALS AND INTERFERENCES

There are no applications currently being appealed that may directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(iii) STATUS OF CLAIMS

Claims 5-24 were pending and rejected in the Final Office Action dated 3-3-2006. Claims 1-4 were cancelled via an amendment dated 12-16-2005. Claims 5-24 are pending and are the subject of this appeal.

(iv) STATUS OF AMENDMENTS

An amendment was filed on 6-1-2006. The amendment was entered on 6-14-2006.

(v) SUMMARY OF CLAIMED SUBJECT MATTER

Independent Claim 5:

A switching apparatus for receiving and transmitting frames and messages (p. 2, ll. 4-5; FIG. 1)[1], wherein the frames consist of relatively long strings of bytes and the messages consist of small entities (p. 2, ll. 5-7; FIG. 1), the switching apparatus comprising a ring of plural data ports comprising input ports and output ports (p. 2, ll. 6-7; FIG. 1), wherein each data port is interconnected to two adjacent data ports (p. 3, ll. 1-3; FIG. 2, 500a-500h), the ring defining for any given pairing of one input port and one output port a set of zero or more intermediate data ports in a given direction (p. 3, ll. 8-14; FIG. 2), the ring for passing the messages received at the input ports through any respective intermediate ports to designated output ports (p. 3, ll. 9-12; FIG. 2), a

[1] References are to the application as filed pursuant to 37 CFR 41.37(c)(1)(v).

crossbar for switching the frames from the input ports to the output ports (p. 3, lines 15-16; FIG. 2, 510), wherein the frames and messages are processed simultaneously (p. 3, ll. 29-31; FIG. 2).

Independent Claim 10:

A process for receiving and transmitting frames and messages (p. 2, ll. 4-5; FIG. 1), wherein the frames consist of relatively long strings of bytes and the messages consist of small entities (p. 2, ll. 5-7; FIG. 1), the process comprising interconnecting plural data ports in a ring (p. 2, ll. 6-7; FIG. 1), the data ports comprising input ports and output ports (p. 2, ll. 6-7; FIG. 1), wherein each data port is interconnected to two adjacent ports (p. 3, ll. 1-3; FIG. 2, 500a-500h), the ring defining for any given pairing of one input port and one output port a set of zero or more intermediate data ports in a given direction (p. 3, ll. 8-14; FIG. 2), passing the messages received at the input ports around the ring through any respective intermediate ports to designated output ports (p. 3, ll. 9-12; FIG. 2), simultaneously with passing the messages (p. 3, ll. 29-31; FIG. 2), switching the frames from the input ports to the output ports via a crossbar (p. 3, ll. 15-16; FIG. 2, 510).

Independent Claim 15:

Apparatus for receiving and transmitting frames and messages (p. 2, ll. 4-5; FIG. 1), wherein the frames consist of relatively long strings of bytes and the messages consist of small entities (p. 2, ll. 5-7; FIG. 1), the apparatus comprising means for interconnecting plural data ports in a ring (p. 2, ll. 6-7; FIG. 1; FIG. 2), the data ports comprising input ports and output ports (p. 2, ll. 6-7; FIG. 1), wherein each data port is interconnected to two adjacent ports (p. 3, ll. 1-3; FIG. 2, 500a-500h), the ring defining for any given pairing of one input port and one output port a set of zero or more intermediate data ports in a given direction (p. 3, ll. 8-14; FIG. 2), means for passing the messages received at the input ports around the ring through any respective intermediate ports to designated output ports (p. 3, ll. 9-12; FIG. 2), means for, simultaneously with passing the messages (p. 3, ll. 29-31; FIG. 2), switching the frames from the input ports to the output ports via a crossbar (p. 3, ll. 15-16; FIG. 2, 510).

Independent Claim 20:

A process for receiving and transmitting frames and messages (p. 2, ll. 4-5; FIG. 1), wherein the frames consist of relatively long strings of bytes and the messages consist of small entities (p. 2, ll. 5-7; FIG. 1), the process comprising determining whether a data packet is a message or frame (p. 4, ll. 17-18; FIG. 3; FIG. 5, 200), if the data packet is a frame, then routing the frame through a crossbar switch (p. 4, ll. 18-20; FIG. 3, 26; FIG. 5, 210), if the data packet is a message, then inserting the message into one of a plurality of ports (p. 4, ll. 21-22; FIG. 3, 27; FIG. 5, 230), wherein the ports are interconnected in a ring giving the message a message ring destination identifier (p. 4, ll. 22-23; FIG. 5, 240), passing the message from port to port until the message reaches a destination port (p. 4, ll. 23-24; FIG. 5, 250).

(vi) GROUNDS OF REJECTION

Claims 5, 6, 8-11, 13-16, and 18-24 were rejected under 102(e) as being anticipated by Dai (USP 6,658,016). Specifically, the Office action asserted that Dai discloses the following limitation:

"a crossbar for switching the frames from the input ports to the output ports"

However, as discussed in the Argument section below, claims 5, 6, 8-11, 13-16, and 18-24 are patentable over Dai.

Claims 7, 12 and 17 were rejected under 103(a) as being unpatentable over Dai in view of Szczepanek (US 6,621,818). Specifically, the Office action asserted that Szczepanek discloses the following limitation:

"a clock for moving the messages by one data port for every clock pulse"

However, as discussed in the Argument section below, claims 7, 12 and 17 are patentable over Dai in view of Szczepanek.

(vii) ARGUMENT

This patent application was filed on December 5, 2001 and has been carefully examined for nearly five years. In general, when examining a patent application, it is important to properly

characterize the prior art in order to determine whether the applicant is entitled to a patent on the claimed subject matter. In this case, in a noble effort to broadly construe the prior art reference, the Examiner has oversimplified the reference to include limitations not disclosed, taught or suggested by that reference. As such, the claimed subject matter is patentable over the reference, even after reading the reference in the broadest possible light. Therefore, the rejections should be reversed and this patent application, which has been pending for nearly five years, should be allowed to issue.

A. Rejection of Claims 5, 6, 8-11, 13-16, and 18-24 under 102(e) as anticipated by Dai

Dai is directed to a switching fabric. Dai clearly distinguishes its switching fabric from crossbar switches. Dai further explains that crossbar switches are inferior to the switching fabrics disclosed in Dai.

To anticipate a claim, the reference must teach each and every element of the claim. MPEP §2131 provides:

> A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. [. . .] The identical invention must be shown in as complete detail as is contained in the ... claim.

Claim 5

Claim 5 includes at least one limitation not disclosed, taught or suggested by Dai. Claim 5 recites, "a **crossbar** for switching the frames from the input ports to the output ports" (emphasis added). In the Advisory Action dated 6/14/2006, the Examiner asserted that Dai's packet switching device anticipates the "crossbar" limitation. (Advisory Action, page 2). However, Dai clearly excludes crossbar switches from the scope of the subject matter claimed in Dai.

In *Honeywell Int'l, Inc. v. ITT Indus.*, 452 F.3d 1312 (Fed. Cir. 2006), the Federal Circuit held:

> "This court has recognized that '[w]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of

> the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question."

In *Honeywell*, the claim term at issue was "electrically conductive fibers". The Federal Circuit narrowly interpreted the claim term to exclude "carbon fibers" because the patentee had "demeaned the properties of carbon fibers" in the specification. The court emphasized the fact that the patentee "denigrated" the use of carbon fibers' with the subject matter claimed. Thus, the Federal Circuit concluded that the patentee "disavowed carbon fibers" from the scope of the claims.

This case is very similar to the *Honeywell* case. Here, Dai demeans the properties of "crossbar" switches in the specification. There are at least 5 instances where Dai clearly distinguishes its switching device from crossbar switches. First, Dai states, "Common switching devices include cross bar switching devices, and packet switching fabrics." (Dai, col. 1, lines 25-26). Second, Dai states, "**One problem with cross bar switching devices** is achieving scalability of the number of network ports. Because of the NxN complexity of the interconnection resources, exponential costs are incurred when increasing the number of network ports of a cross bar switching device" (emphasis added). (Dai, col. 1, lines 37-42). Third, Dai states, "Because packet switching fabrics include multiple switching devices, **fabrics provide better scalability than crossbar switches** because each of the switching devices of the fabric includes a plurality of network ports, and the number of switching devices of the fabric may be increased in order to increase the number of network connections for the switch" (emphasis added). (Dai, col. 1, lines 43-48). Fourth, Dai states, "A further objective of the present invention is to provide a packet switching fabric providing convenient scalability wherein the total number of network ports supported by the fabric may be scaled up **without incurring exponential costs such as in cross bar switching devices**" (emphasis added). (Dai, col. 2, lines 54-57). Fifth, Dai states, "Another object of the present invention is to provide a packet switching fabric providing convenient scalability wherein the total number of network ports supported by the fabric may be scaled up **without incurring exponential costs such as in cross bar switching devices**" (emphasis added). (Dai, col. 3, lines 6-10).

These five statements in Dai's specification clearly "denigrate" the use of crossbar switches in Dai's claimed subject matter. Therefore, Dai's switching device clearly excludes crossbar

switches. Because Dai clearly distinguishes, and even denigrates, crossbar switches from its switching device, Dai has indicated a clear disavowal of crossbar switches from its switching device. Therefore, Dai does not anticipate claim 5.

Claims 10, 15, 20

To the extent that independent claims 10, 15 and 20 include the similar limitation as that recited in claim 5, namely the "crossbar", claims 10, 15 and 20 are patentable over Dai for the same reasons claim 5 is patentable over Dai.

Claim 6

Claim 6 includes at least one limitation not disclosed, taught or suggested by Dai. Claim 6 recites, "**a parser for separating** the frames from the messages to form two separate data streams" (emphasis added). In the Advisory Action, the Examiner asserted that Dai's packet switching device anticipates the "parser" limitation. (Advisory Action, page 2). However, Dai nowhere discloses, teaches or suggests "a parser" as recited in claim 6.

Dai only discloses Ethernet links for transmitting and receiving data packets and control ring segments for transmitting and receiving control messages. (Dai, col. 6, lines 33-49). However, having two different objects transmitting and receiving data packets versus control messages is not the same as "a parser for separating the frames from the messages". Dai only discloses that Ethernet links are used for data packets and control ring segments are used for control messages. Thus, Dai only discloses a switching device having two separate components for handling data packets versus control messages. However, Dai does not disclose, teach or suggest how these messages are "separated". As such, Dai nowhere discloses, teaches or suggests "**a parser for separating** the frames from the messages" as recited in claim 6 (emphasis added).

Claim 8

Claim 8 includes at least one limitation not disclosed, taught or suggested by Dai. Claim 8 recites, "**plural gates** respectively associated with each data port for allowing a given message into a given data port **only if no other data is present in the given data port**" (emphasis added). In the

Advisory Action, the Examiner asserted that Dai's data ring bandwidth management anticipates this limitation. (Advisory Action, page 2). Dai discloses a "control ring processing circuit" that "receives and processes control messages including output queuing controlled messages for bandwidth management of the segments of the data ring". (Dai, col. 8, lines 62-67 & col. 9, lines 1-4). However, a "control ring processing unit" as disclosed in Dai, is not the same as "plural gates" "associated with each data port for allowing a given message into a given data port only if no other data is present in the given data port".

The purpose of Dai's "control ring processing unit" is to manage the bandwidth resources of the data ring and the memory unit links. (Dai, col. 8, lines 62-67). This is achieved by determining the message type of the message received by the control ring processing unit. Then, the control ring processing unit determines whether to download the message or transmit the message. (Dai, col. 9, lines 15-31). Therefore, Dai's control ring processing unit acts as a central unit for processing messages and managing bandwidth resources. However, Dai has no disclosure, teaching or suggestion of "plural gates" where a message is received "only if no other data is present in the given data port." Even under the broadest interpretation, Dai's "control ring processing unit" is limited to the definition of a unit where messages are processed and handled in order to manage bandwidth resources. However, Dai nowhere discloses "**plural gates** respectively associated with each data port for allowing a given message into a given data port **only if no other data is present in the given data port**" as recited in claim 8 (emphasis added).

Claims 9, 11, 13-14, 16 and 18-24

By virtue of its dependency on claim 5, claim 9 is patentable over Dai. Further, by virtue of their dependency on claim 10, claims 11, and 13-14 are patentable over Dai. Similarly, by virtue of their dependency on claim 15, claims 16 and 18-19 are patentable over Dai. Finally, by virtue of their dependency on claim 20, claims 21-24 are patentable over Dai.

B. Rejection of Claims 7, 12 and 17 under 103(a) as unpatentable over Dai in view of Szczepanek.

Claims 7, 12 and 17 are patentable over Dai in view of Szczepanek for two reasons. First, by virtue of their dependency on independent claims 5, 10 and 15 respectively, claims 7, 12 and 17 are patentable over Dai for the same reasons claims 5, 10 and 15 are patentable over Dai.

Second, claim 7 recites, "a clock **for moving the messages by one data port for every clock pulse**" (emphasis added). The Examiner asserted that it would be obvious to use the clock disclosed in Szczepanek along with Dai. However, it would not be obvious to use Szczepanek's clock in the manner claimed. Szczepanek only discloses a switch which receives both a clock signal and a data signal synchronously from another switch. (Szczepanek, col. 13, lines 33-40). However, Szczepanek nowhere discloses, teaches or suggests "a clock **for moving the messages by one data port for every clock pulse**" as recited in claim 7 (emphasis added).

To the extent claims 12 and 17 have similar limitations to that recited in claim 7, namely "moving messages by one data port for every clock pulse", claims 12 and 17 are patentable for the same reasons claim 7 is patentable over Dai in view of Szczepanek.

CONCLUSION AND RELIEF

In view of the foregoing, it is believed that all claims patentably define the subject invention over the prior art of record and are in condition for allowance. The undersigned requests that the Board overturn the rejection of all claims and hold that all of the claims of the above referenced application are allowable.

Respectfully submitted,

Date: August 9, 2006

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(viii) CLAIMS APPENDIX

The claims involved in this Appeal are as follows:

5. A switching apparatus for receiving and transmitting frames and messages, wherein the frames consist of relatively long strings of bytes and the messages consist of small entities, the switching apparatus comprising

a ring of plural data ports comprising input ports and output ports, wherein each data port is interconnected to two adjacent data ports, the ring defining for any given pairing of one input port and one output port a set of zero or more intermediate data ports in a given direction, the ring for passing the messages received at the input ports through any respective intermediate ports to designated output ports

a crossbar for switching the frames from the input ports to the output ports

wherein the frames and messages are processed simultaneously.

6. The switching apparatus of claim 5 further comprising

a parser for separating the frames from the messages to form two separate data streams.

7. The switching apparatus of claim 5 further comprising

a clock for moving the messages by one data port for every clock pulse.

8. The switching apparatus of claim 5 further comprising

plural gates respectively associated with each data port for allowing a given message into a given data port only if no other data is present in the given data port.

9. The switching apparatus of claim 5 further comprising

a controller for preventing conflict between message passing on the ring and switching by the crossbar.

10. A process for receiving and transmitting frames and messages, wherein the frames consist of relatively long strings of bytes and the messages consist of small entities, the process comprising

interconnecting plural data ports in a ring, the data ports comprising input ports and output ports, wherein each data port is interconnected to two adjacent ports, the ring defining for any given pairing of one input port and one output port a set of zero or more intermediate data ports in a given direction

passing the messages received at the input ports around the ring through any respective intermediate ports to designated output ports

simultaneously with passing the messages, switching the frames from the input ports to the output ports via a crossbar.

11. The process of claim 10 further comprising

separating the frames from the messages to form two separate data streams.

12. The process of claim 10 further comprising

moving the messages by one data port for every clock pulse.

13. The process of claim 10 further comprising

allowing a given message into a given data port only if no other data is present in the given data port.

14. The process of claim 10 further comprising

preventing conflict between message passing on the ring and switching.

15. Apparatus for receiving and transmitting frames and messages, wherein the frames consist of relatively long strings of bytes and the messages consist of small entities, the apparatus comprising

means for interconnecting plural data ports in a ring, the data ports comprising input ports and output ports, wherein each data port is interconnected to two adjacent ports, the ring defining for any given pairing of one input port and one output port a set of zero or more intermediate data ports in a given direction

means for passing the messages received at the input ports around the ring through any respective intermediate ports to designated output ports

means for, simultaneously with passing the messages, switching the frames from the input ports to the output ports via a crossbar.

16. The apparatus of claim 15 further comprising

means for separating the frames from the messages to form two separate data streams.

17. The apparatus of claim 15 further comprising

means for moving the messages by one data port for every clock pulse.

18. The apparatus of claim 15 further comprising

means for allowing a given message into a given data port only if no other data is present in the given data port.

19. The apparatus of claim 15 further comprising

means for preventing conflict between message passing on the ring and switching.

20. A process for receiving and transmitting frames and messages, wherein the frames consist of relatively long strings of bytes and the messages consist of small entities, the process comprising

determining whether a data packet is a message or frame

if the data packet is a frame, then routing the frame through a crossbar switch

if the data packet is a message, then

inserting the message into one of a plurality of ports, wherein the ports are interconnected in a ring

giving the message a message ring destination identifier

passing the message from port to port until the message reaches a destination port.

21. The process of claim 20 further comprising

if the data packet is a message, then placing the message in a message-in queue.

22. The process of claim 21

wherein the message-in queue comprises a FIFO.

23. The process of claim 20 further comprising

after the message reaches the destination port, placing the message in a message-out queue.

24. The process of claim 23

wherein the message-out queue comprises a FIFO.

(ix) EVIDENCE APPENDIX

No evidence has been submitted pursuant to §§ 1.130, 1.131, or 1.132 of this title. No other evidence has been entered by the examiner and relied upon by appellant in the appeal.

(x) RELATED PROCEEDINGS APPENDIX

Since there are no applications currently being appealed that may directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal, there are no copies of decisions rendered by a court or the Board.